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F762P
no.55

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

PACIFIC NORTHWEST FOREST EXPERIMENT STATION.

FOREST STATISTICS FOR WALLOWA COUNTY, OREGON

By Edward D. Buell.

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330 GIANNINI HALL, UNIVERSITY OF CALIFORNIA
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ADDRESS REPLY TO
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AND REFER TO
R-NW

424 U. S. COURT HOUSE,
MAIN AND SIXTH STREETS,
PORTLAND, OREGON

Forest Survey
County Statistics

June 28, 1937

99.54
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no.55

Director,
California Forest Experiment Station,
332 Giannini Hall,
Berkeley, Calif.

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Dear Mr. Kotok:

Enclosed is a copy of "Forest Statistics for Wallowa County, Oregon", one of a series of mimeographed reports presenting results of the inventory phase of the forest survey in eastern Oregon and eastern Washington counties. A copy of the explanatory text, "The Forest Survey of Eastern Oregon and Eastern Washington", was mailed you with the first report of the series and should be referred to for detailed type descriptions and methods of survey procedure.

Previously forest statistics have been released for all counties in western Oregon and western Washington, for Klamath, Wasco, Jefferson, Harney, Lake, Deschutes, Morrow, Baker, Crook, and Wheeler Counties in eastern Oregon, and for Klickitat, Yakima, Kittitas, Chelan, Okanogan, Ferry, Walla Walla, Columbia, Garfield, and Asotin Counties in eastern Washington. Additional copies of these reports are available for distribution.

Very truly yours,

THORNTON T. MUNGER, Director

By H. J. Andrews
Acting

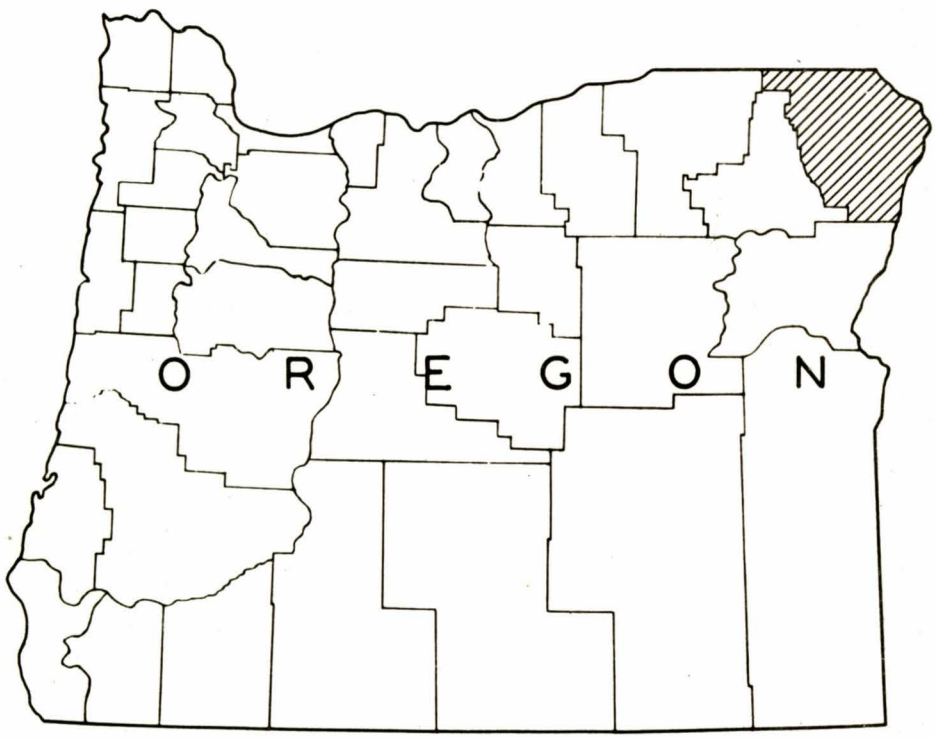
Enclosure

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
332 GIANNINI HALL, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

FOREST STATISTICS
FOR
WALLOWA COUNTY, OREGON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

= Forest survey report #55



U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION
THORNTON T. MUNGER, DIRECTOR

H. J. ANDREWS, IN CHARGE OF FOREST SURVEY R. W. COWLIN, ASSISTANT

EDWARD D. BUELL, IN CHARGE OF FIELD AND OFFICE WORK
IN WALLOWA COUNTY

PORTLAND, OREGON JUNE 25, 1937

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
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BERKELEY, CALIFORNIA

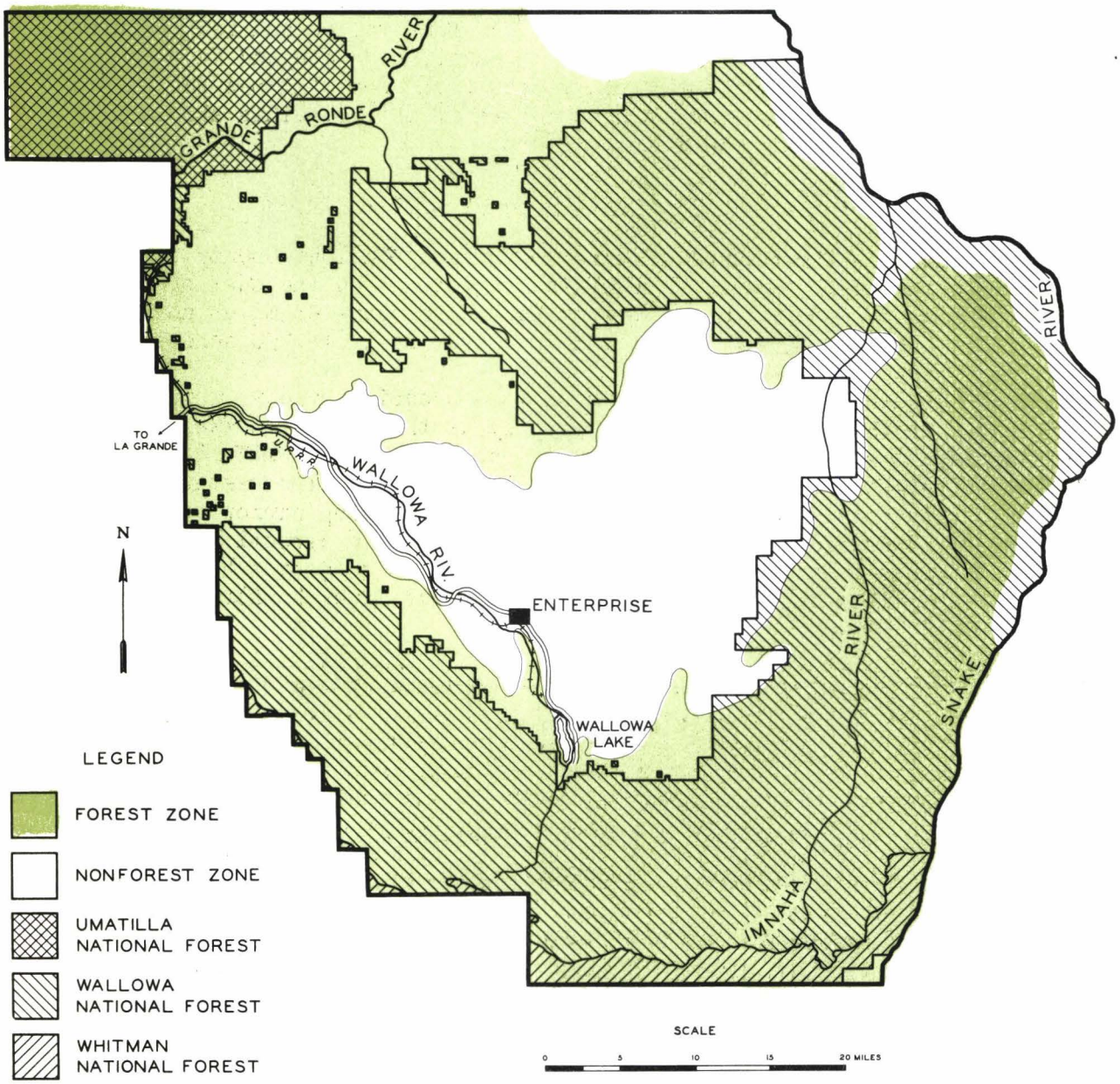
FIGURE 1

OUTLINE MAP

OF

WALLOWA COUNTY, OREGON

1937



FOREST STATISTICS FOR WALLOWA COUNTY, OREGON

By Edward D. Buell[1/]

This is the initial report of a forest survey of Wallowa County, Oregon.[2/] It is one of a series of reports presenting the results of an inventory of the forest resources of Oregon and Washington conducted by the Forest Service as a part of a national study of forest resources. The field work was done in 1935 and 1936. The statistics of the forest inventory of Wallowa County are presented in four tables and four figures. An explanatory text, "The Forest Survey of Eastern Oregon and Eastern Washington," contains detailed definitions of the forest types recognized and a description of the methods used in the inventory. This should be referred to in connection with this report.

Location and Description of County

Located in the northeast corner of Oregon, Wallowa County is bounded on the north by the State of Washington and on the east by the State of Idaho. It extends south from Washington some 65 miles and west from Idaho about 60 miles. Its total land area is 2,013,790 acres.

The southwest corner of the county is occupied by a very rugged portion of the Blue Mountains known locally as the high Wallowas. In this section the steep granite peaks rise abruptly from the Wallowa Valley to heights of over 10,000 feet at some points. The eastern part of the county consists of a high plateau broken by deep narrow canyons with precipitous sides that prohibit travel except in directions parallel to the courses of the streams that have cut these gorges below the level of the plateau. Hell's Canyon of the Snake River borders this

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1/ THE FIELD AND OFFICE WORK OF THE FOREST SURVEY OF WALLOWA COUNTY WAS DONE BY EDWARD D. BUELL, P. D. KEMP, G. H. JACKSON, C. S. SMITH, H. M. WOLFE, M. J. LAURIDSEN, A. W. HODGMAN, B. P. BENNETT, H. H. ARMSTRONG, R. S. STEADMAN, C. E. DE WOLFE, GRACE FREDRICKSEN, MARION BECQUET, H. A. DE RICE, AND C. E. BROWN.

2/ OREGON AND WASHINGTON WERE DIVIDED FOR PURPOSES OF THE SURVEY INTO TWO REGIONS (1) THE DOUGLAS FIR REGION, CONSISTING OF THAT PART OF BOTH STATES WEST OF THE SUMMIT OF THE CASCADE RANGE, AND (2) EASTERN OREGON AND EASTERN WASHINGTON, THAT PART OF BOTH STATES EAST OF THE SUMMIT OF THE CASCADE RANGE. EACH REGION WAS DIVIDED INTO FOREST SURVEY UNITS COMPOSED OF ONE OR MORE COUNTIES. AT A LATER DATE A REPORT WILL BE ISSUED FOR EACH SURVEY UNIT PRESENTING A TEXTUAL DESCRIPTION OF THE UNIT, DETAILED INVENTORY SUMMARIES, AND STATISTICS OF GROWTH AND DEPLETION ANALYZED IN THE LIGHT OF THE INVENTORY. A REGIONAL REPORT WILL ALSO BE ISSUED WHICH WILL PRESENT AND DISCUSS FINDINGS FOR THE REGION AS A WHOLE. THE REGIONAL REPORT WILL INCLUDE AN INTERPRETATION OF THE FOREST SURVEY DATA AS RELATED TO OTHER ECONOMIC DATA AND A COMPREHENSIVE ANALYSIS OF THE REGIONAL FOREST SITUATION FROM BOTH A PHYSICAL AND AN ECONOMIC STANDPOINT.

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
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plateau on the east. This canyon, one of the deepest in the United States, is estimated to be over 5,600 feet from rim to water. He Devil Peak, one of the Seven Devils of Idaho, rises approximately 7,900 feet above the river. The topography of the northern part of the county resembles to some extent the east portion but here the canyons are less extreme in their abruptness. The three sections of rough topography surround the level to undulating Wallowa Valley which extends from Wallowa Lake west along the Wallowa River to its junction with the Minam River.

All streams draining the county are tributary to the Snake River. The Wallowa and Minam Rivers head near Eagle Cap, one of the higher peaks of the Wallowas, and flow northwest into the Grande Ronde River. The latter crosses the northwest corner of the county but most of its drainage basin is situated outside Wallowa County. The Imnaha River also heads near Eagle Cap and flows east and north into the Snake River.

Climatic conditions vary greatly within the county due to its wide range in topography. Along the Snake River, which at the point where it leaves the county is less than 1,000 feet above sea level, the mean annual temperature is the highest in eastern Oregon, about 56 degrees. The winters along the Snake River and lower Imnaha are very mild. Snow very seldom falls and never remains for more than a few days. Summer temperatures are high, often reaching more than 100 degrees. In contrast to this the high mountains in the southwest part of the county have cool summers and extreme winters with snow remaining almost the year long in some places. Precipitation varies with the topography also; the lowest elevations having the least and the high mountains the most. No official records are available for the lower Imnaha area but it is safe to estimate that during some years the rainfall will not exceed 10 inches. The U. S. Weather Bureau Station at Wallowa, elevation 2,935 feet, reports an annual average of 17 inches and at the station at Howardville, elevation 3,600 feet, the average is 28 inches. Estimates place the precipitation in the mountainous section at well over 40 inches.

Transportation is provided by a branch line of the Union Pacific system and by a primary and secondary road system. The railroad extends from Joseph along the Wallowa River to the county's western boundary. After leaving the county it continues on to La Grande where it connects with the main line. Daily passenger and freight service is maintained. A State highway extends from the head of Wallowa Lake down the Wallowa Valley to Minam and La Grande. At Enterprise a spur of this highway extends north to near the Oregon-Washington State line. When this piece of road is complete it will connect Enterprise with Lewiston, Idaho. At present only a very poor county road completes this connection. The secondary road system is well developed in the north and central portions of the county but is very meager in the south and east portions. A large part of the mountainous areas can be reached only on foot or on horse back.

According to the Bureau of the Census the population of Wallowa County in 1930 was 7,814. This population is concentrated in the Wallowa Valley, other sections of the county being very sparsely settled. Three incorporated places are listed. Enterprise, the most important town and county seat, has 1,379 inhabitants, Wallowa 749, and Joseph 504.

Nonforest Land

Of the 2,013,790 acres of land in Wallowa County 903,670, or about 45 percent, was classified by the survey as nonforest land. The bulk of this timberless area occurs in the Wallowa Valley where it forms a nonforest zone (figure 1) consisting almost entirely of farms and grazing land. According to the Bureau of the Census there are approximately 111,000 acres of crop land in the county of which all but a small percentage is in the nonforest zone. Open grazing land occupied by grass, weeds, sage, and other brush is found not only in the nonforest zone but also distributed throughout the forested part of the county where individual parcels range in size from 40 acres or less to several thousand. The large areas of open grazing land inside the forest zone occur chiefly along benches bordering the Snake River, on the breaks of the Imnaha and its tributaries, and in the northern part of the county sloping into the Grande Ronde River. Many of these areas are covered by bunch grass of good density and are very valuable as a source of forage.

Nonforest land in the form of barrens amounts to approximately 30,000 acres in the county. Barren land is found in important amounts in the high mountains west of Wallowa Lake and along the precipices of the Snake River canyon. It consists of bare rock too steep to permit vegetative growth to become established. These barren areas add much to the scenic value of the localities where they occur.

Forest Land and Cover Types

The forest land of Wallowa County forms a zone which surrounds the Wallowa Valley. This land amounting to 1,110,000 acres was divided by the Forest Survey into areas occupied by 26 cover types. The inch-to-the-mile type map of the county shows the extent and location of areas of the various types.[3/] The influence of topography on ground cover is clearly pictured by the type map. The forests are found at the higher elevation while the lowlands are mostly nonforest. In the northern and eastern parts of the county commercial forest types occur

3/ MAPS ON INCH-TO-THE-MILE SCALE SHOWING THE LOCATION OF THE INTEGRAL AREAS COMPOSING THE 26 TYPES RECOGNIZED IN WALLOWA COUNTY WERE PREPARED IN CONNECTION WITH THE FOREST INVENTORY. THESE DATA ARE ALSO BEING INCORPORATED IN A LITHOGRAPHED MAP, SCALE ¼ INCH TO THE MILE. INFORMATION ABOUT THESE MAPS AND HOW TO OBTAIN THEM WILL BE FURNISHED UPON REQUEST. ADDRESS DIRECTOR, PACIFIC NORTHWEST FOREST EXPERIMENT STATION, 423 U. S. COURT HOUSE, PORTLAND, OREG.

in stringers along the streams while the exposed slopes are often covered by timber of noncommercial character. In the high mountains large bodies of subalpine types are shown.

The most important types in the county are those composed of stands in which the key species is ponderosa pine. While concentrated in the northern part of the county, these types are not limited to that section. They are found to a considerable extent along the upper Imnaha River, along the Minam River and in very long narrow stringers along streams in the eastern part of the county. Timber stands made up of western larch, Douglas fir, white fir, and Engelmann spruce are found throughout the entire forest zone. Lodgepole pine stands while found intermingled with all other forest types, are considerably more abundant in the southern and eastern parts of the county than in other sections. Hardwood and juniper types are of no importance.

Ponderosa Pine Types

Approximately 53 percent of the forest land in the county is occupied by ponderosa pine types. There are nearly 500,000 acres covered by ponderosa pine stands of saw-timber size and character and 90,000 acres covered by immature stands. Three groups of types were classified; pure ponderosa pine, those in which ponderosa pine makes up 80 percent or more of the volume; ponderosa pine, those in which pine amounts to from 50 to 80 percent of the volume; and pine mixture, those in which pine volume is 20 to 50 percent. These three groups roughly divide the pine types of the county in thirds.

The pine types contain the most valuable timber in the county and occur for the most part in the more accessible sections. Nearly all the pine lands lying in the Wallowa River drainage basin are well adapted to horse or tractor logging and truck transportation. Those that lie on the slopes of the Grande Ronde River while not too difficult to log present a problem in transportation due to the steep topography.

The character of the timber in the ponderosa pine stands is somewhat below the average for eastern Oregon. The trees are short and often have heavy crowns that extend well down the bole. Stands per acre vary from 3 thousand to 20 thousand board feet averaging about 8 thousand feet. Insect damage is about normal in the ponderosa pine stands and defect does not reduce the gross volume by more than about 5 to 7 percent.

Immature pine stands are chiefly the result of cutting. They are located for the main part north of the open land in the Wallowa Valley where important logging operations have been in progress for a number of years. Most of the areas are restocked in a manner that will insure future timber crops if adequate protection is given but past fires have considerably reduced the possibilities of large stands per acre over some of the areas. Damage from fire is most noticeable in

the vicinity north of Wallowa where stocking conditions are generally poor and some nonstocked areas may be found.

Other Forest Types

Other forest types consist mostly of mixed stands of western larch, Douglas fir, white fir, Engelmann spruce, and lodgepole pine. Western larch, Douglas fir, and white fir are more abundant than the other species and often constitute as much as 80 percent of a stand. While most of the types in this group are decidedly heterogeneous, there are many areas occupied by forests containing 50 percent or more of a single species. Types consisting mostly of Douglas fir occupy about 50,000 acres, those mostly lodgepole occupy 45,000 acres and those mostly western larch occupy 12,000 acres. Other areas covered by types dominated by a single species are unimportant.

Mixed types have little commercial value at present because of their location and character of timber. Their most important use now is the protecting of watersheds. Considerable insect damage to lodgepole pine occurred about thirty years ago and as a result on areas where this tree was abundant the dead and down material has made thousands of acres practically an impassable jungle. The fire hazard over these areas is very high with apparently little chance of betterment for a number of years. Notable examples of this condition occur over most of the high plateau section in the eastern part of the county, in the vicinity south of Wallowa Lake, and between Wallowa and Sled Springs Ranger Station.

The percentage of noncommercial forest types is above that in any other eastern Oregon county. They occupy 254,000 acres, about 40 percent of which is subalpine and 60 percent is noncommercial due to rocky or very poor sites. A considerable amount of the latter type is found in the eastern part of the county where most of it consists of immature Douglas fir stands on sites too poor to ever produce timber of commercial size.

Detailed type statistics are presented in table 2, generalized in table 3, and shown graphically in figure 4.

Productive Capacity of Forest Land

A classification of the forest land of Wallowa County according to its capacity to produce timber crops is shown in table 4. About one-fifth of the forest land is listed as incapable of producing commercial timber. This percentage is greater than for other counties in eastern Oregon.

The productive capacity of the pine types averages considerably lower than that for most of the pine lands in the State. Douglas fir sites are about average for the eastern Oregon and eastern Washington region.

Saw-Timber Volume

The total saw-timber volume of Wallowa County is 4¼ billion board feet. The species distribution of this volume is shown in table 1 and figure 2. Ponderosa pine constitutes a little over half the total volume in the county. Douglas fir, western larch, and lowland white fir are the other important species found.

While there are only about 28,000 acres of Douglas fir types in the county occupied by stands of merchantable size, this species contributes almost a billion board feet in saw-timber volume. The amount of saw-timber volume in proportion to the type acreage is not due to high volume per acre but to the wide distribution of Douglas fir as an associate species throughout nearly all saw-timber types in the county.

The volume of western larch and white fir is chiefly on areas classified as upper-slope types . Other associate species in this type that contribute somewhat to the total volume of the county are Engelmann spruce, lodgepole pine, and alpine fir.

Most of the ponderosa pine volume is found in the more accessible portion of the forest zone. The volume of Douglas fir, western larch, and white fir is located both in the accessible and inaccessible sections. However, under present market conditions this volume has little commercial value even when it is possible to log it cheaply.

The topography of the county indicates that when the timber is cut all but a very small percentage of it will be transported to the Wallowa Valley either to be manufactured there or shipped by rail to mills located outside the county.

Approximately 45 million board feet of timber is located within the Eagle Cap Primitive Area. This area is set aside for recreational use and the timber is reserved from cutting. Nearly all the timber thus reserved is located in rough and inaccessible sections.

Forest Ownership

The Federal Government is the major owner of forest resources in Wallowa County. Approximately 80 percent of the forest land and 70 percent of the saw-timber volume is in this ownership class. The Forest Service administers all of these resources with the exception of a small amount occurring on public domain land cared for by the General Land Office. Approximately one hundred twenty-eight thousand acres of the land under Forest Service administration has been set aside for recreational use.

Nearly 20 percent of the forest land and over 25 percent of the saw-timber volume is in private ownership. The forest resources in

private ownership are intermingled with or adjacent to the resources of the Federal Government so cooperation in management is very desirable.

The State, county, and cities have minor holdings in the county.

Economic Development of Wallowa County

Since its creation in 1878, agriculture and lumbering have been the eminent industries in the economic development of Wallowa County. Agricultural development was gradual until about 1900. Between 1900 and 1920 much more rapid expansion took place due chiefly to additional irrigating facilities. The percentage of the county in farms rose from about 10 percent in 1900 to approximately 25 percent in 1920; the number of irrigated farms increased 140 percent in the same period. Stock raising took swift steps forward with cattle and swine taking the lead in the advance. Agricultural development has slowed down very materially since 1920. In some sections of the county evidence of farm abandonment is very obvious but the farms of the Wallowa Valley appear far more prosperous than they do in many sections of the State. It is likely that future expansion will continue to be slow.

The local demand for forest products has been met by material produced on the forest land of the county. The forest industrial development of the county was confined to small projects until 1914. During the period between 1914 and 1928 the East Oregon Lumber Company operated a mill located at Enterprise which had a capacity of 120 thousand board feet per 8-hour shift. The company also maintained extensive logging operations. At the peak of operation which occurred in 1924 the monthly payroll of the company was approximately $40,000. However, financial reverses forced the company to discontinue operation in 1928. Bowman-Hicks & Company began large operations in the county in 1923 and continue to have a very important place in its forest industries. This company established a mill at Wallowa but a considerable proportion of the logs cut on their own operations and also those purchased from small logging operators have been taken to their plant at La Grande.

During the years 1925-35, inclusive, log production has decreased from a peak of 115 million feet per year in 1925 to about 6 million feet in 1935.

At present logging operations are active in several localities in the county. The most recent development is an operation north of Enterprise near Elk Mountain which produces logs on a scale large enough to maintain a supply for a fleet of about 15 trucks hauling to the railroad at Enterprise. Smaller operations along the Enterprise-Flora highway and the Coverdale road supply logs to mills at Joseph. Other small operations in addition to Bowman-Hicks activities are at work near Wallowa and Minam. The combined capacity of the operations in the county will probably exceed 125 thousand board feet per 8-hour shift.

During the years 1925-35, inclusive, lumber production has decreased from about 40 million board feet per year to less than 5 million board feet. For the period 1325-29 production decreased about 50 percent. From 1930 to 1935 it has fluctuated from less than one hundred thousand board feet to around 7 million per year.

There were 8 active mills in the county in 1936. Most of these are of small capacity ranging from 5 to 15 thousand board feet per 8-hour shift. The McKinley-Hampson Lumber Company mill at Joseph is larger, being of 30 thousand capacity. The Bowman-Hicks mill at Wallowa, while of 60 thousand capacity, operated at capacity only a small part of the time during the year.

Forest Uses

Besides supplying raw material to the lumber industry of Wallowa County, its forests are important for grazing, recreation, and watershed protection.

Irrigation is very important to the welfare of the county as the long dry summers prohibit raising most agricultural crops without supplementing natural precipitation. Practically all of the water used for irrigation in the county originates in its forested sections and therefore it is necessary to maintain forest cover over these sections to insure as constant a supply as possible. In addition to its beneficial effect on stream flow and erosion, forest cover helps to prevent springs from drying up during drought periods and thus helps to better stock watering conditions on the forest ranges.

The use of the forest range by stock is very intensive in the county. Cattle and sheep graze over the timbered areas during the summer months and retire to the lower open lands in winter. As a considerable amount of the open area is Federal land within the Wallowa National Forest, this forest issues grazing permits covering every month of the year. It is the only national forest in the Pacific Northwest on which year-long grazing is important.

Wallowa Lake, the high mountains, and Hell's canyon are all well known recreational features of Wallowa County and Oregon. Many visitors come to the county each summer to enjoy them. The Eagle Cap Primitive Area located in the high Wallowas offers a special attraction to recreationalists who wish to get away from highways, hotels, and other improvements. The area contains wild rugged country with many high peaks; two over 10,000, seven over 9,000, and seven more over 8,000. Sacajawea, Matterhorn, and Eagle Cap are some of the more famous mountains. The special administrative plans for this area will preserve as far as possible its original natural state. Game is plentiful; elk, deer, and bear bring many hunters to bag them each fall. Without forest cover this game would soon disappear and the county would suffer an economic loss.

The future economic welfare of Wallowa County depends on proper management and protection of its forests and on its agricultural development.

FOREST STATISTICS FOR WALLOWA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 1. VOLUME OF TIMBER BY SPECIES AND OWNERSHIP CLASS
DATA CORRECTED TO JANUARY 1, 1937

TREES 12" AND MORE IN D.B.H.
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

SURVEY SYMBOL	SPECIES[1]	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	FEDERAL			TOTAL
						PUBLIC DOMAIN	NATIONAL FOREST AVAILABLE FOR CUTTING	NATIONAL FOREST RESERVED FROM CUTTING	
Y	PONDEROSA PINE	805,148	12,306	57,261	15	19,242	1,339,190	9,928	2,243,090
W	WESTERN WHITE PINE						187		187
LP	LODGEPOLE PINE	2,121	25	344			20,347	1,987	24,824
DF	DOUGLAS FIR	221,811	2,324	13,654		5,481	718,360	6,793	968,423
MH	MOUNTAIN HEMLOCK							381	381
WF	LOWLAND WHITE FIR	83,872	217	4,039		1,570	236,310	4,614	330,622
AF	ALPINE FIR	967		93			27,924	2,183	31,167
WL	WESTERN LARCH	113,185	691	8,587		1,909	372,969	11,513	508,854
ES	ENGELMANN SPRUCE	16,752	50	940	75	401	91,800	8,139	118,157
BC[2]	NORTHERN BLACK COTTONWOOD	2,260			15	20	611		2,906
	TOTAL	1,246,116	15,613	84,918	105	28,623	2,807,698	45,538	4,228,611

1/ SPECIES NOT LISTED HERE WHICH OCCUR IN THE COUNTY, BUT IN NEGLIGIBLE QUANTITIES, ARE WHITEBARK PINE, ROCKY MOUNTAIN RED CEDAR (JUNIPERUS SCOPULORUM), PACIFIC YEW, ALDER, AND BIRCH.

2/ ADDITIONAL VOLUMES DETERMINED IN CORDS (A) NORTHERN BLACK COTTONWOOD 1,101 CORDS (B) ASPEN 55 CORDS (C) WESTERN JUNIPER 31 CORDS.

FOREST STATISTICS FOR WALLOWA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JANUARY 1, 1937

SURVEY TYPE NO.	TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	FEDERAL			TOTAL
						PUBLIC DOMAIN	NATIONAL FOREST AVAILABLE FOR CUTTING	NATIONAL FOREST RESERVED FROM CUTTING	
	WOODLAND:								
58	SCATTERED JUNIPER: JUNIPER OR MOUNTAIN MAHOGANY FORESTS OCCUPYING 5 TO 10% OF THE LAND AREA	50				15			65
5½	PONDEROSA PINE WOODLAND: SCATTERED STANDS OF MATURE PONDEROSA PINE ON UNFAVORABLE SITES	8,975	165	485		235	23,050		32,910
	PONDEROSA PINE: FORESTS CONTAINING 50% OR MORE OF PONDEROSA PINE								
20	PONDEROSA PINE, LARGE: FORESTS CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	40,215	460	2,930		1,110	102,965	400	148,080
20.5	PURE PONDEROSA PINE, LARGE: FORESTS CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	62,060	1,200	5,285		1,195	76,570	1,345	147,655
21	PONDEROSA PINE, SMALL: 12 TO 22" DBH	32,845	820	1,045		265	17,855		52,830
22	PONDEROSA PINE SEEDLINGS, SAPLINGS, AND POLES: LESS THAN 12" DBH	35,760	590	300	20	190	2,820		39,680
	PINE MIXTURE: MIXED FORESTS CONTAINING 20 TO 50% OF PONDEROSA PINE								
27	PINE MIXTURE, LARGE: 12" OR MORE DBH	24,060	70	1,600		995	87,725	1,265	115,715
28	PINE MIXTURE, SMALL: LESS THAN 12" DBH	31,685	430	810		150	15,285	495	48,855
	DOUGLAS FIR: FORESTS CONTAINING 60% OR MORE OF DOUGLAS FIR								
7	DOUGLAS FIR, SMALL OLD GROWTH: 22 TO 40" DBH						40	15	55
8	DOUGLAS FIR, LARGE SECOND GROWTH: 22 TO 40" DBH	1,210		10		30	3,820		5,070
9A	DOUGLAS FIR, LARGE POLES: 12 TO 20" DBH	190		5			22,375	35	22,605
9B	DOUGLAS FIR, SMALL POLES: 6 TO 10" DBH	220		5		20	19,995	100	20,340
10	DOUGLAS FIR, SEEDLINGS AND SAPLINGS: LESS THAN 6" DBH	165					1,715		1,880
	UPPER-SLOPE MIXTURE: MIXED FORESTS OF WESTERN LARCH, DOUGLAS FIR, ENGELMANN SPRUCE, WHITE FIR, ALPINE FIR, MOUNTAIN HEMLOCK, LODGEPOLE PINE, OR WHITE PINE: OCCASIONALLY OTHER SPECIES								
27½	UPPER-SLOPE MIXTURE, LARGE: 12" OR MORE DBH	13,995	45	1,220	30	69,295	20,725	1,650	106,960
28½	UPPER-SLOPE MIXTURE, SMALL: LESS THAN 12" DBH	13,300	30	215			38,125	6,795	58,465
	LOWLAND WHITE FIR: FORESTS CONTAINING 50% OR MORE OF LOWLAND WHITE FIR								
29	LOWLAND WHITE FIR, LARGE: 12" OR MORE DBH	90					990		1,080
30	LOWLAND WHITE FIR, SMALL: LESS THAN 12" DBH						85		85
	LODGEPOLE PINE: FORESTS CONTAINING 50% OR MORE OF LODGEPOLE PINE								
25	LODGEPOLE PINE, LARGE: 12" OR MORE DBH						440	55	495
26	LODGEPOLE PINE, MEDIUM: 6 TO 10" DBH	3,250		410		25	23,900	5,710	33,295
26A	LODGEPOLE PINE, SMALL: LESS THAN 6" DBH	2,185		25			6,190	3,860	12,260
	HARDWOOD: FORESTS CONTAINING 50% OR MORE OF NORTHERN BLACK COTTONWOOD AND ASPEN								
31.5	HARDWOOD, LARGE: 12" OR MORE DBH	1,355				5			1,360
31	HARDWOOD, SMALL: LESS THAN 12" DBH	10					15		25
33	SUBALPINE: FORESTS AT UPPER LIMITS OF TREE GROWTH, USUALLY UNMERCHANTABLE	1,785			140		29,500	67,630	99,055
	NONSTOCKED CUTOVERS: LOGGED AREAS NOT SATISFACTORILY RESTOCKED AND NOT CARRYING A RESIDUAL STAND OF I M OR MORE PER ACRE								
35A	CUT SINCE BEGINNING OF 1920	2,715	20	60			525		3,320
	DEFORESTED AREAS: NONRESTOCKED AREAS DEFORESTED OTHERWISE THAN BY CUTTING								
37	DEFORESTED BURNS	270		10		5	2,210	930	3,425
38	NONCOMMERCIAL ROCKY AREAS	12,285	335	480		2,635	130,500	8,320	154,555
	TOTALS FOR FOREST LAND	288,675	4,165	14,895	190	76,170	627,420	98,605	1,110,120
1,18 & 2	NONFOREST LAND: CULTIVATED, GRASS, SAGEBRUSH, BARRENS, CITIES, UNMEANDERED WATER SURFACES, ETC.	519,300	26,790	6,305	245	20,445	301,010	29,575	903,670
	TOTALS FOR COUNTY	807,975	30,955	21,200	435	96,615	928,430	128,180	2,013,790

FOREST STATISTICS FOR WALLOWA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JANUARY 1, 1937

TYPE DEFINITION		PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	FEDERAL			TOTAL
						PUBLIC DOMAIN	NATIONAL FOREST AVAILABLE FOR CUTTING	NATIONAL FOREST RESERVED FROM CUTTING	
WOODLAND: JUNIPER									
SURVEY TYPE 5B		50				15			65
HARDWOOD: COTTONWOOD AND ASPEN									
SURVEY TYPES 31 AND 31.5		1,365				5	15		1,385
PONDEROSA PINE 12" OR MORE DBH									
SURVEY TYPES 5½, 20, 20.5, 21, AND 27		168,155	2,715	11,345		3,800	308,165	3,010	497,190
PONDEROSA PINE LESS THAN 12" DBH	ON CUTOVER AREAS	65,310	1,005	990	20	325	9,665		77,315
SURVEY TYPES 22 AND 28	ON OLD BURNS	2,135	15	120		15	8,440	495	11,220
	TOTAL	67,445	1,020	1,110	20	340	18,105	495	88,535
CONIFERS 12" OR MORE DBH OTHER THAN PONDEROSA									
PINE AND LODGEPOLE PINE									
SURVEY TYPES 7, 8, 9A, 27½, AND 29		15,485	45	1,235	30	69,325	47,950	1,700	135,770
CONIFERS LESS THAN 12" DBH OTHER THAN PONDEROSA	ON CUTOVER AREAS	12,005	15	100			1,040		13,160
PINE AND LODGEPOLE PINE	ON OLD BURNS	1,680	15	120		20	58,880	6,895	67,610
SURVEY TYPES 9B, 10, 28½, AND 30	TOTAL	13,685	30	220		20	59,920	6,895	80,770
LODGEPOLE PINE 12" OR MORE DBH									
SURVEY TYPE 25							440	55	495
LODGEPOLE PINE LESS THAN 12" DBH									
SURVEY TYPES 26 AND 26A		5,435		435		25	30,090	9,570	45,555
NONCOMMERCIAL AREAS									
SURVEY TYPES 33 AND 38		14,070	335	480	140	2,635	160,000	75,950	253,610
NONRESTOCKED CUTOVER AREAS AND DEFORESTED BURNS									
SURVEY TYPES 35A AND 37		2,985	20	70		5	2,735	930	6,745
TOTALS FOR FOREST LAND		288,675	4,165	14,895	190	76,170	627,420	98,605	1,110,120
NONFOREST LAND									
SURVEY TYPES 1, 1B, AND 2		519,300	26,790	6,305	245	20,445	301,010	29,575	903,670
TOTALS FOR COUNTY		807,975	30,955	21,200	435	96,615	928,430	128,180	2,013,790

FOREST STATISTICS FOR WALLOWA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA OF FOREST LAND, BY SITE QUALITY
DATA CORRECTED TO JANUARY 1, 1937

TYPE	SITE QUALITY CLASS 1/		AREA			
				PERCENTAGE OF--		
			ACRES	CONIFEROUS FOREST LAND CLASSIFIED AS TO SITE QUALITY	TOTAL FOREST LAND 2/	TOTAL AREA OF COUNTY
PONDEROSA PINE, PONDEROSA PINE MIXTURE, AND WHITE FIR	PONDEROSA PINE	III	4,005	0.5	0.4	0.2
		IV	307,295	38.0	27.7	15.3
		V	268,225	33.2	24.2	13.3
		VI	11,685	1.4	1.0	0.6
			591,210	73.1	53.3	29.4
DOUGLAS FIR AND UPPER-SLOPE MIXTURE	DOUGLAS FIR	IV	54,445	6.7	4.9	2.7
		V	163,355	20.2	14.7	8.1
			217,800	26.9	19.6	10.8
TOTAL			809,010	100.0	72.9	40.2
LODGEPOLE PINE			46,050		4.2	2.3
NONCOMMERCIAL ROCKY AREAS			154,555		13.9	7.6
SUBALPINE			99,055		8.9	4.9
HARDWOOD			1,385		0.1	0.1
JUNIPER			65			
TOTAL			301,110		27.1	14.9
GRAND TOTAL			1,110,120		100.0	55.1

1/ THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. SIX SITE QUALITY CLASSES ARE RECOGNIZED FOR PONDEROSA PINE AND FIVE FOR DOUGLAS FIR, CLASS I BEING IN EACH CASE THE HIGHEST. IN THE SURVEY THE PONDEROSA PINE AND DOUGLAS FIR CLASSIFICATIONS, RESPECTIVELY, WERE USED NOT ONLY FOR TYPES OF WHICH THESE SPECIES ARE CHARACTERISTIC COMPONENTS BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

2/ THE COUNTY HAS A TOTAL AREA OF 2,013,790 ACRES, OF WHICH 1,110,120 ACRES (55.1 PERCENT) IS FOREST LAND AND 903,670 ACRES (44.9 PERCENT) IS NONFOREST LAND.

FOREST STATISTICS FOR WALLOWA COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES AND OWNERSHIP CLASS (FROM TABLE 1)

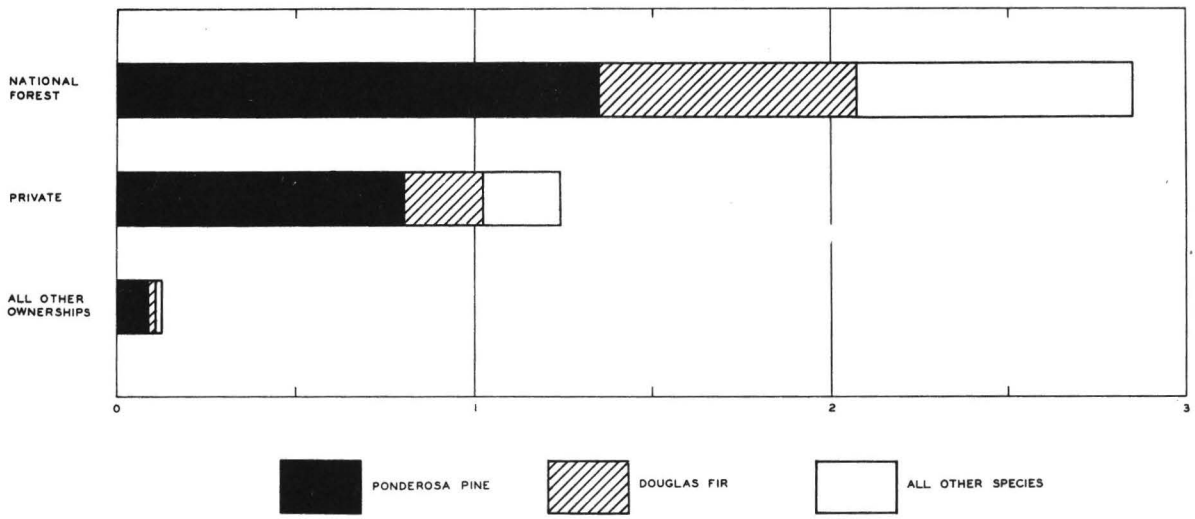

FIGURE 3. OWNERSHIP OF FOREST LAND (FROM TABLE 2)

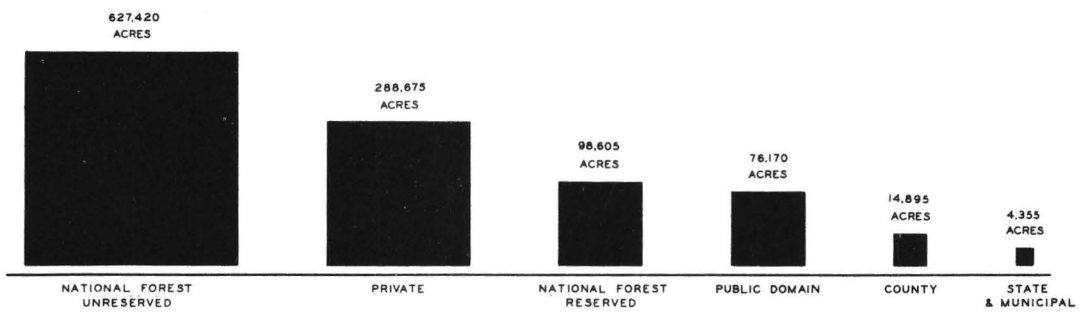

FIGURE 4. DISTRIBUTION OF FOREST LAND BY GENERALIZED TYPES ALL OWNERSHIP CLASSES (FROM TABLE 3)